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TANG, KENNETH				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/714,597

Applicant(s)

HORIKAWA, SHIGERU

Examiner

KENNETH TANG

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date 12/19/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-10 are presented for examination.
2. This action is in response to the Amendment/Remarks on 12/19/08. Applicant's arguments have been fully considered but are moot in view of the new grounds of rejections.

Information Disclosure Statement

3. The information disclosure statement filed 12/10/08 has been considered by the Examiner.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the recited "computer-readable recording medium" of Claim 10. The Specification does not mention the recited "computer-readable recording medium". Thus, there is no support or antecedent basis for the recited "computer-readable recording medium" that allows the meaning of the terms to be ascertained, as required in 37 CFR 1.75(d)(1).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claim recites a “computer-readable recording medium”. However, the specification fails to provide clear support or antecedent basis for this limitation. Without clear support or antecedent basis for “computer-readable recording medium”, it is unclear if Applicant intends to claim something broader than storage media (e.g., RAM, ROM, CD-ROM, disks, etc.) and cover signals, carrier waves and other forms of transmission media. Therefore, the limitation “computer-readable recording medium” is not limited to physical articles or objects which constitute a manufacture within the meaning of 35 USC 101 and enable any functionality of the instructions carried thereby to act as a computer component and realize their functionality. As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colle et al. (hereinafter Colle) (US 2004/0158568 A1) in view of Burnley et al. (hereinafter Burnley) (US 7,188,170 B1).

As to claim 1, Colle teaches a job scheduling management method for managing schedules of jobs allocated to computers connected through a network (see Abstract, Fig. 1, items 110, 115, 120, 125), comprising the steps of:

monitoring a performance state of a resource of a computer, including in said computers, to which said jobs have been allocated (utilization or availability, etc.) (Fig. 1, item 145, page 3, [0033], page 1, [0008] and [0009], page 11, [0113]);

determining if said performance state meets a predetermined condition (alerted by utilization exceeding a certain threshold percentage, for example) (page 11, [0114], page 1, [0011]);

if said performance state meets said predetermined condition, detecting a job, of said jobs allocated to said computer, that is uncompleted at a timing when said predetermined condition is met (task items that need to be completed as part of performing a service action) (see Abstract, page 11, [0114], [0116], [0121], lines 1-5);

detecting another computer that is available to execute said detected uncompleted job (task items that need to be completed) based on information concerning resources required for

executing said detected uncompleted job (scheduling based on availability information of resources) (page 1, [0008], see Abstract); and

allocating said detected uncompleted job to said detected other computer (scheduling available resource to execute task items that need to be completed) (see Abstract, page 2, [0016]).

Colle is explicitly silent wherein said performance state includes information indicating at least one of a usage rate of a Central Processing Unit (CPU) included in said computer, an amount of memory being used in said computer, an amount of empty space on a disk storage device included in said computer, an average processing time for the disk storage device, and an average query processing time for a database application being executed by said computer. However, Burnley teaches a resource management system that tracks and manages utilization data of resources, wherein the data being tracked is a performance states such as a CPU usage, memory or network utilization (col. 18, lines 16-30). Colle (see Abstract, [0033]) and Burnley (see Title and Abstract) are analogous art because they are both in the same field of endeavor of managing resource utilization. Thus, one of ordinary skill in the art would have known to modify Colle's resource management system such that it would specifically take into consideration performance state information such as CPU usage, memory, network utilization, etc., as taught in Burnley's resource management system. The suggestion/motivation for doing so would have been to provide the predicted result of providing a mechanism for collecting, filtering, and analyzing data and for performing a "simpler" set of operations for gathering usage data (Burnley - col. 1, lines 21-36, col. 18, lines 29-30). Therefore, one of ordinary skill in the art would have been able to combine Colle and Burnley to obtain the invention of claim 1.

4. As to claim 2, Burnley teaches wherein the determination as to if said predetermined condition is met is based on how many times usage rate of said CPU exceeds a predetermined usage rate (col. 21, lines 1-27).

5. As to claim 3, Colle teaches a job scheduling management method in a management computer for allocating jobs to a plurality of computers connected through a network and managing a schedule of each of said jobs (see Abstract, Fig. 1, items 110, 115, 120, 125), comprising the steps of:

managing first information indicating correspondence between said job and said computer to which said job is allocated, second information indicating one or more resources required for executing said job, and third information indicating one or more resources to be used by each of said computers (Fig. 1, item 150, 130, etc., [0028], [0029]);

monitoring a performance state of a resource of said computer to which said job is allocated (utilization or availability, etc.) Fig. 1, item 145, page 3, [0033], page 1, [0008] and [0009], page 11, [0113]);

determining if said operating state meets a predetermined condition (alerted by utilization exceeding a certain threshold percentage, for example) (page 11, [0114], page 1, [0011]);

detecting an uncompleted job among said jobs allocated to said computers using said first information (task items that need to be completed as part of performing a service action) (see Abstract, page 11, [0114], [0116], [0121], lines 1-5, Fig. 1, items 150, 130);

extracting one or more resources required for executing said detected uncompleted job using said second information (scheduling based on availability information of resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130);

extracting another computer among said plurality of computers that is available to use said extracted resources using said third information (scheduling based on availability information of resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130, 120, 125, etc.); and

allocating said detected uncompleted job to said extracted other computer (scheduling available resource to execute task items that need to be completed) (see Abstract, page 2, [0016]).

6. Colle is explicitly silent wherein said performance state includes information indicating at least one of a usage rate of a Central Processing Unit (CPU) included in said computer, an amount of memory being used in said computer, an amount of empty space on a disk storage device included in said computer, an average processing time for the disk storage device, and an average query processing time for a database application being executed by said computer. However, Burnley teaches a resource management system that tracks and manages utilization data of resources, wherein the data being tracked is a performance states such as a CPU usage, memory or network utilization (col. 18, lines 16-30). Colle (see Abstract, [0033]) and Burnley

(see Title and Abstract) are analogous art because they are both in the same field of endeavor of managing resource utilization. Thus, one of ordinary skill in the art would have known to modify Colle's resource management system such that it would specifically take into consideration performance state information such as CPU usage, memory, network utilization, etc., as taught in Burnley's resource management system. The suggestion/motivation for doing so would have been to provide the predicted result of providing a mechanism for collecting, filtering, and analyzing data and for performing a "simpler" set of operations for gathering usage data (Burnley - col. 1, lines 21-36, col. 18, lines 29-30). Therefore, one of ordinary skill in the art would have been able to combine Colle and Burnley to obtain the invention of claim 3.

7. As to claim 4, Colle teaches wherein when allocating said detected uncompleted job to said extracted other computer, said job and the other jobs having been already allocated to the other computer are rescheduled (page 13, [0135]).

8. As to claim 5, Colle teaches a job scheduling management method as claimed in claim 3, further comprising the steps of:

when allocating said detected uncompleted job to said extracted other computer, detecting an uncompleted job of said jobs having been already allocated to said extracted another computer using said first information (dynamic scheduling and rescheduling wherein the scheduler is modified dynamically) (page 13, [0135]);

extracting one or more resources required for executing said detected uncompleted job of said computer using said second information (scheduling based on availability information of resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130);

extracting further computer that is available to use said extracted resources for said another computer using said third information (scheduling based on availability information of resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130, 120, 125, etc.); and

allocating said detected uncompleted job to said extracted further computer (scheduling available resource to execute task items that need to be completed) (see Abstract, page 2, [0016]).

9. As to claim 8, Colle teaches a job scheduling management method as claimed in claim 3, wherein when allocating said detected uncompleted job to said extracted other computer, said detected uncompleted job is allocated to a plurality of other computers among said plurality of computers according to one or more resources required for executing said job (dynamic scheduling and rescheduling wherein the scheduler is modified dynamically and scheduling based on availability information of a plurality of resources) (page 13, [0135], page 1, [0008], see Abstract, Fig. 1, items 150, 130, 120, 125, etc.).

10. As to claim 9, Colle teaches a job scheduling management computer for allocating jobs to a plurality of computers connected through a network and managing schedules of said jobs, comprising (see Abstract, Fig. 1, items 110, 115, 120, 125):

management means for managing information indicating that a first job is allocated to a first one of said computers and a second job is allocated to a second one of said computers (page 2, [0016], page 5, [0055], lines 12-24));

monitoring means for monitoring a performance state of a resource of said first computer (Fig. 1, item 145, age 3, [0033]); and

rescheduling means for re-allocating said first job allocated to said first computer into said second computer and said second job allocated to said second computer to a third one of said computers with respect to information managed by said management means in accordance with an instruction given from said monitoring means (page 13, [0135]).

11. Colle is explicitly silent wherein said performance state includes information indicating at least one of a usage rate of a Central Processing Unit (CPU) included in said computer, an amount of memory being used in said computer, an amount of empty space on a disk storage device included in said computer, an average processing time for the disk storage device, and an average query processing time for a database application being executed by said computer. However, Burnley teaches a resource management system that tracks and manages utilization data of resources, wherein the data being tracked is a performance states such as a CPU usage, memory or network utilization (col. 18, lines 16-30). Colle (see Abstract, [0033]) and Burnley (see Title and Abstract) are analogous art because they are both in the same field of endeavor of

managing resource utilization. Thus, one of ordinary skill in the art would have known to modify Colle's resource management system such that it would specifically take into consideration performance state information such as CPU usage, memory, network utilization, etc., as taught in Burnley's resource management system. The suggestion/motivation for doing so would have been to provide the predicted result of providing a mechanism for collecting, filtering, and analyzing data and for performing a "simpler" set of operations for gathering usage data (Burnley - col. 1, lines 21-36, col. 18, lines 29-30). Therefore, one of ordinary skill in the art would have been able to combine Colle and Burnley to obtain the invention of claim 9.

12. As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 3.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colle et al. (hereinafter Colle) (US 2004/0158568 A1) in view of Burnley et al. (hereinafter Burnley) (US 7,188,170 B1), and further in view of Hinsley (GB 2293675 A).

14. As to claim 6, Colle in view of Burnley is silent wherein said management computer allocates one or more jobs to itself. However, Hinsley teaches a computer network interconnecting processors as nodes in the network for performing processes and determining whether itself or neighboring nodes are better to perform the process based on who has the highest ratings (see Abstract, page 1, lines 21-28 through page 2, line 1). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Colle in view of Burnley's process/job allocation system such that it could include the possibility of allocating one or more jobs to itself, as taught in Hinsley. The suggestion/motivation for doing so would have been to provide the best node to perform the execution in the situation where itself is the best one and an improved means of allocating processors to be performed in the most efficacious manner (see Abstract, page 1, lines 16-20). Therefore, it would have been obvious to combine Colle, Burnley and Hinsley to obtain the invention of claim 6.

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colle et al. (hereinafter Colle) (US 2004/0158568 A1) in view of Burnley et al. (hereinafter Burnley) (US 7,188,170 B1), and further in view of Tanaka (US 2003/0074387 A1).

16. As to claim 7, Colle teaches wherein said management computer further manages information indicating correspondence between said job and a time when said job is to be finished and information indicating a time passed in executing said job, and allocating the uncompleted job of said jobs allocated to said computer to another computer if predetermined conditions are not met (see rejection of claim 3 above). Burnley teaches estimating/predicting the time period of utilization (col. 1, lines 39-46 and col. 38, lines 20-33). However, Colle and Burnley does not specifically teach predicting that said job is not finished in the time expected. Tanaka teaches distributing jobs based on predicting a completion time of the jobs (see Abstract, [0023]). One of ordinary skill in the art would have known to modify Colle in view of Burnley's

job distribution such that it would take into consideration the prediction of the job completion time. The suggestion/motivation for doing so would have been to provide the predicted result of being able to adjust the job allocation in accordance with circumstances such as not being able to finish within the time expected (Tanaka - page 2, [0024]). This allows for efficient distribution of jobs loaded in the system. Therefore, it would have been obvious to one of ordinary skill in the art to combine Colle, Burnley, and Tanaka to obtain the invention of claim 7.

Response to Arguments

17. During patent examination, the pending claims must be “given their broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

18. *Applicant argues in the Remarks that the prior art of record do not teach the newly amended claimed limitations.*

Applicant’s amendment to the claims prompted the new grounds of rejections that make the arguments moot.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **KENNETH TANG** whose telephone number is (571)272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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